

May 6, 2005

Mr. Craig Hunt, Water Resource Control Engineer
Regional Water Quality Control Board—North Coast Region
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

Via Overnight and E-mail

16017.05

Subject: Addendum #1
Work Plan for Foundation Removal, Additional Investigation, and
Interim Remedial Measures
Former Georgia Pacific California Wood Products Manufacturing Facility
Fort Bragg, California

Dear Mr. Hunt:

Acton • Mickelson • Environmental, Inc. (AME) is submitting *Addendum #1* to the *Work Plan for Foundation Removal, Additional Investigation, and Interim Remedial Measures, Former Georgia Pacific Wood Products Manufacturing Facility, Fort Bragg, California* (site, Work Plan) dated March 21, 2005 in response to comments made during a March 29, 2005 meeting attended by Georgia-Pacific Corporation (G-P), Regional Water Quality Control Board (RWQCB) - North Coast Region, and AME representatives. The RWQCB requested submittal of a Work-Plan addendum to identify chemicals of potential concern (COPCs), soil screening levels, and the proposed approach for soil sampling beneath removed building foundations.

CHEMICALS OF POTENTIAL CONCERN

A review of past facility operations has been performed to evaluate COPCs at the site. Soil sample analyses following building demolition, foundation excavation, or other excavation (i.e., geophysical anomaly remote from building location) will be selected based on past operations at the associated building or location and identified COPCs. Table 1 (attached) lists the areas addressed in the Work Plan, processes associated with each of these areas, substances used or waste products for these areas, COPCs for these areas, and analytical test methods to be used to assess the potential presence of COPCs.

SOIL SCREENING LEVELS

As discussed during our meeting with the RWQCB and California Office of Environmental Health Hazard Assessment (OEHHA) on March 29, 2005, GP has initiated the process of performing a Human Health and Ecological Risk Assessment for the site. The initial step of this

process is development of risk-based screening levels to identify chemicals and/or areas requiring additional evaluation (e.g., further characterization or removal). However, to guide interim remedial measures (IRMs) until site-specific screening levels are developed through risk assessment activities, AME proposes the use of the following published soil screening guidelines:

- Environmental Screening Levels (ESLs) established by the RWQCB - San Francisco Bay in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* dated February 2005
- California Human Health Screening Levels (CHHSLs) established by the California Environmental Protection Agency in *Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties* dated January 2005

Screening levels will be developed using a health protective risk-based approach reviewed and approved by the Office of Environmental Health Hazard Assessment (OEHHA). Approval of these risk-screening levels prior to the start of field activities would result in their use instead of ESLs or CHHSLs. If field activities start before site-specific screening levels are approved, ESLs or CHHSLs will be used until such time that site-specific screening levels are available.

Any investigation/IRM activity conducted using ESLs or CHHSLs for guidance will be compared to site-specific screening levels to assess whether additional activity (e.g., , further excavation) is warranted. If an ESL and CHHSL exist for a specific compound, then the lower of the two levels will be used. Table 1 will be used as a guide to selecting analytical test methods during investigation/IRM of each area of interest. For each chemical class and analytical method (e.g. VOCs, EPA Method 8260), Table 1 lists the lowest ESL or CHHSL of the individual chemicals as a guide in selecting the analytical method and reporting limit. Comparisons of reported soil concentrations from investigation/IRM work will be made on a chemical-specific basis.

PROPOSED SOIL SAMPLING RATIONALE AND METHODOLOGY

The proposed soil sampling rationale incorporates two types of approaches: systematic sampling and judgmental or authoritative sampling. Systematic sampling is an unbiased method that consists of establishing a grid layout for the area to be sampled and selecting sampling locations within the grid cells or at grid nodes. The actual locations can be either randomly selected within the grid cells or at regular locations within the cells. Systematic sampling is suitable for statistical analysis of the sample data provided that the dataset consists of at least ten samples.

Judgmental sampling relies on an observational approach where sampling focuses on areas most likely to be impacted by COPCs, such as storage tanks, areas beneath pipelines, sumps, surface stains, equipment locations, and floor or foundation cracks. This approach is useful to assess the extent of COPC impacts in a localized area and typically uses more closely spaced sampling locations than the systematic grid approach. Both methods will be employed in the field to provide a statistically defensible dataset in areas where there are no signs of impact from COPCs,

as well as allowing for a more focused sampling program in areas where impact from COPCs is more likely to exist.

The proposed systematic sampling approach uses the OEHHA guideline of 1,000 square feet to define a typical residential backyard. Assuming this is the basic residential unit exposure area, a maximum grid spacing of 30 feet is proposed in areas where there are no signs of environmental impairment. This grid spacing will allow for the collection of at least one soil sample per 900 square feet of building area for the larger buildings. At least two soil samples per structure will be collected beneath all structures of less than 900 square feet in area.

Judgmental sampling is proposed in areas exhibiting a greater potential for impact from COPCs. Prior to demolition, a reconnaissance of the building areas will be conducted to identify areas where impact from COPCs is potentially likely to exist. The area will be observed for signs of potential COPC impacts, including floor staining, cracks, equipment locations, sumps, clarifiers, pipelines, and underground storage tanks.

If any of these features are present, their location will be noted and, after structure demolition and foundation removal, the area will be sampled at a grid or in-line spacing appropriate for the size and orientation of the feature identified (e.g., less than 10-foot spacing for a smaller feature and greater than 10-foot spacing for a larger feature). Data resulting from the judgmental sampling approach is useful for delineating areas of greater COPC impact; use of these data in the risk assessment will be discussed with OEHHA prior to incorporation into the analysis.

The soil sampling depth for both systematic and judgmental sampling will be one foot below the base of the excavations. This depth is at the mid point of the surface soil stratum, which for risk assessment is anticipated to be designated as the top two feet of soil. Verification samples following the completion of IRMs will also be obtained from a depth of one foot below the base of the excavations.

The verification samples will be analyzed for only those COPCs that had reported concentrations greater than the screening levels in the initial samples. Where warranted, recommendations for deeper soil sampling and/or ground water sampling will be including in the report of findings.

Very truly yours,

ACTON • MICKELSON • ENVIRONMENTAL, INC.



Mark W. Clardy, R.G.
Project Geologist



Michael A. Acton, R.E.A.
Vice President

Enclosures: Table 1—Area-Specific Information

Mr. Craig Hunt

May 6, 2005

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cc: Ms. Julie Raming, Georgia-Pacific Corporation
Mr. Doug Heitmeyer, Georgia-Pacific Corporation
Ms. Linda Ruffing, City of Fort Bragg
Ms. Kay Johnson, Tetra Tech, Inc.

MA:MWC:tm

<p style="text-align: center;">TABLE 1</p> <p style="text-align: center;">AREA-SPECIFIC INFORMATION</p> <p style="text-align: center;">Georgia-Pacific Corporation California Wood Products Manufacturing Facility 90 West Redwood Avenue, Fort Bragg, California</p>						
Areas Addressed in Work Plan	Process	Substance Used or Waste Products	COPCs	Test Method	RL/MDL (mg/kg)	Minimum ESL / CHHSL (mg/kg)
Compressor House (Bldg. #11)	Compressors	Compressor Oil	TPHo	EPA 8015	1	500
Former Sawmill #1 (Bldg. #12)	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
Lath Plant	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03

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Areas Addressed in Work Plan	Process	Substance Used or Waste Products	COPCs	Test Method	RL/MDL (mg/kg)	Minimum ESL / CHHSL (mg/kg)
Powerhouse (Bldg. #13)	Boiler Fueling and Operation	Bunker C, residual fuel	TPHo	EPA 8015	1	500
			PAHs	EPA 8270	0.067/ 0.01	0.038
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
		Motor oil, used	TPHo	EPA 8015	1	500
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067/ 0.01	0.038
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
		Bottom ash waste, may include clinker	PAHs	EPA 8270	0.067/ 0.01	0.038
			Dioxins and furans	EPA 8290	1.00E-06	4.62E-06
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
	Power generation	Turbine oil, hydraulic oil, machine lubricants, petroleum solvents	TPHd, TPHo	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
Paint Storage Shed	Paint and solvent storage	Paint, paint thinners, solvents	TPH as kerosene, stoddard, naphtha solvents (petroleum-based solvents in range of TPHd)	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
Transformer Pad	Power distribution	Transformer cooling oil	PCBs, individual congeners	EPA 8082	0.012	0.22/ 0.089
Oil Storage Shed	Oil storage	Lubricating oil, used oil	TPHo	EPA 8015	1	500
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067/ 0.01	0.038
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1

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Press Building	Machinery routine maintenance	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
	Compressors	Compressor Oil	TPHo	EPA 8015	1	500
Cooling Towers	Boiler coolant/cooling towers	Corrosion inhibitors, water conditioners	Cr VI+	EPA 3060A w/ 7199	0.5	1.8
			Sodium molybdate	EPA 6010B	1	40
		Disinfectants/ other	Ethanol	EPA 8260	100	None
			Isopropanol	EPA 8260	100	None
Cooling Towers Shed, Poly Tanks Pad	Boiler coolant/cooling towers	Corrosion inhibitors, water conditioners	Cr VI+	EPA 3060A w/ 7199	0.5	1.8
			Sodium molybdate	EPA 6010B	1	40
		Disinfectants/ other	Ethanol	EPA 8260	100	None
			Isopropanol	EPA 8260	100	None
Truck Dump	Routine maintenance of hydraulic unit	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03

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Areas Addressed in Work Plan	Process	Substance Used or Waste Products	COPCs	Test Method	RL/MDL (mg/kg)	Minimum ESL / CHHSL (mg/kg)
Fly Ash Reinjection System	Fly ash processing	Ash waste	PAHs	EPA 8270	0.067/ 0.01	0.038
			Dioxins and furans	EPA 8290	1.00E-06	4.62E-06
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
Fuel Barn (Bldg. #14)	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
Chipper Bldg. (Bldg. #15)	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
Powerhouse Fuel Storage (Bldg. #17)	Fuel storage	Bunker C, residual fuel	TPHo	EPA 8015	1	500
			PAHs	EPA 8270	0.067/ 0.01	0.038
			CA Title 22 Metals	EPA 6010B / 7400	0.15 to 1	1
		Jet fuel	TPHd	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067/ 0.01	0.038

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Areas Addressed in Work Plan	Process	Substance Used or Waste Products	COPCs	Test Method	RL/MDL (mg/kg)	Minimum ESL / CHHSL (mg/kg)
Water Supply Switch Building	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
Dewatering Slabs	Fly ash processing	Ash waste	PAHs	EPA 8270	0.067/ 0.01	0.038
			Dioxins and furans	EPA 8290	1.00E-06	4.62E-06
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
Sewage Pumping Station	Machinery routine maintenance at sawmills, planing mills, sorting mills, debarkers, chippers, etc.	Hydraulic oils and machine lubricants; petroleum solvents	TPH as stoddard, naphtha solvents (petroleum-based solvents in range of TPHd); TPH as lubricants (in range of TPHo)	EPA 8015	1	100
		Chlorinated solvents, paint solvents	VOCs	EPA 8260	0.005 for most	4.48E-03
Former Mobile Equipment Shop (Parcel 3)	Vehicle Maintenance	Gasoline, diesel, used motor oil, hydraulic oil, degreasers	TPHg	EPA 8015	1	100
			TPHd, TPHo	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067 / 0.01	0.038
			CA Title 22 Metals	EPA 6010B/7400	0.015 to 1	1

TABLE 1						
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Georgia-Pacific Corporation California Wood Products Manufacturing Facility 90 West Redwood Avenue, Fort Bragg, California						
Areas Addressed in Work Plan	Process	Substance Used or Waste Products	COPCs	Test Method	RL/MDL (mg/kg)	Minimum ESL / CHHSL (mg/kg)
Glass Beach Nos. 1 - 3	Waste Fill	May possibly include log deck scrapings, bottom ash waste, clinker, fly ash, burn debris, waste diesel, motor oil, solvents.	TPHd, TPHo	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067/ 0.01	0.038
			Dioxins and furans	EPA 8290	1.00E-06	4.62E-06
			PCBs, individual congeners	EPA 8082	0.012	0.22/ 0.089
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
Geophysical Anomaly Areas, Parcels 3 and 10	Waste Fill	May possibly include log deck scrapings, bottom ash waste, clinker, fly ash, burn debris, waste diesel, motor oil, solvents.	TPHd, TPHo	EPA 8015	1	100
			VOCs	EPA 8260	0.005 for most	4.48E-03
			PAHs	EPA 8270	0.067/ 0.01	0.038
			Dioxins and furans	EPA 8290	1.00E-06	4.62E-06
			PCBs, individual congeners	EPA 8082	0.012	0.22/ 0.089
			CA Title 22 Metals	EPA 6010B/ 7400	0.15 to 1	1
<u>Notes</u> PAHs by EPA 8270 to be reported to the method detection limit (MDL). PCBs by EPA 8082 analyze for individual congeners. For dioxins and furans by 8290 in general, and PCBs by 8082 at waste fill locations, analyze select soil samples where ash/ waste oil, or maximum PAH concentrations are present. CA = California COPC = chemical(s) of potential concern EPA = United States Environmental Protection Agency ESL/CHHSL = Environmental Screening Level / California Human Health Screening Level The CHHSL is listed after the slash, and only if its value is less than the ESL. PAH = Polycyclic Aromatic Hydrocarbon PCB = polychlorinated biphenyl RL/MDL = Reporting Limit / Method Detection Limit TPH = Total Petroleum Hydrocarbon(s) TPHd = Total Petroleum Hydrocarbon(s) as diesel TPHg = Total Petroleum Hydrocarbon(s) as gasoline TPHo = Total Petroleum Hydrocarbon(s) as motor oil VOC = Volatile Organic Compound						